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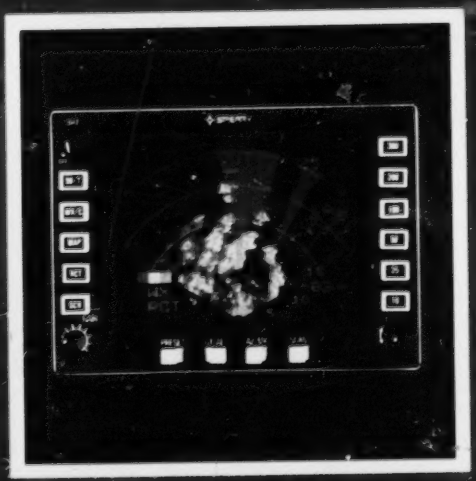
Business and commercial Aviation

including COMMUTER
— Starts Opposite Page 68

B/CA Analysis:® Piper's 602P

...he Future ...f Weather Radar



Business Aviation Within the Fortune 1,000

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December 1982

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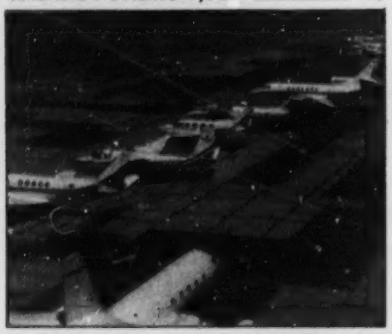

B/CA's annual analysis of the *Fortune* 1,000 companies indicates that those leading industrials that operate aircraft continue to outpace their nonoperating counterparts.

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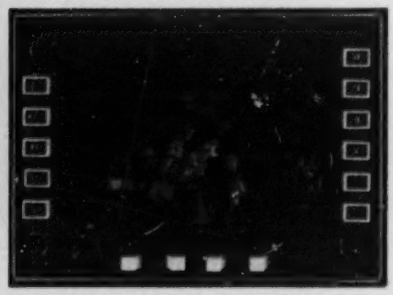

B/CA takes a look at some of the emerging technologies that promise significant improvements in weather radars for business aircraft in the next few years.

CLEARANCE DELIVERY

Sometimes you just get lucky.

Here we were, the 25th anniversary of B/CA fast approaching and with it a 40-page special section that would chronicle the birth, growth and maturity of not only the magazine but also the industry that gave it life. An important decision had to be made.

Who could handle such a large and difficult assignment? The author would have to be an accomplished professional who could take a huge volume of material and reduce it to an interesting, eminently readable history of B/CA and the business aviation industry. And he had to make our deadline for the January 1983 issue, too.

Who could write such an article from the perspective of one who was there? We needed an "insider" — a writer who understood two very complex industries, publishing and aviation — in order to satisfy ourselves and our readers, all knowledgeable insiders themselves. Yet the writer could not be too close to B/CA, lest the copy be self-serving.

Who, indeed, other than Bob Parke? As luck would have it, Parke retired from Ziff-Davis Publishing

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More and more business aircraft operators are finding that updating and refurbishing their aircraft is a cost-effective means of acquiring a "new" machine.

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Winter presents a unique set of challenges to aviators, but caution, wisdom and observation of careful operating procedures can neutralize almost every threat.

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Company in July after a 30-year tenure, the last five spent as a Divisional Vice President. Robert B. Parke started with Z-D as an Advertising Manager at *Flying* magazine in 1952. He became Editor and Publisher of *Flying* in 1967, holding that dual role until he assumed the VP post in 1975.

Parke's retirement merely meant that he was now available to accept free-lance assignments, no matter how large and difficult they might be.

We got lucky. We got Bob Parke.

THE COVER

B/CA's Technical Editor George Larson photographed Piper's 602P. Sperry provided the radar photo and Research Editor David W. Almy photographed the ramp scene for the *Fortune* 1,000.

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Business and commercial Aviation

Business Aviation and the *Fortune* 1,000

DAVID W. ALMY

More than half of the *Fortune* 1,000 industrial corporations operate aircraft, and if history is any indication, they will rebound faster and surer from the current recession.

by David W. Almy

Economic upheaval tends to severely test the mettle of even the most financially secure corporations. This past year has been no exception. And, once again, the operators of corporate aircraft have outpaced, in almost all areas, their nonoperating competition, according to an analysis of the 1981 financial performance of *Fortune* magazine's top 1,000 industrial corporations. The statistics were compiled recently by Aviation Data Service, Incorporated of Wichita.

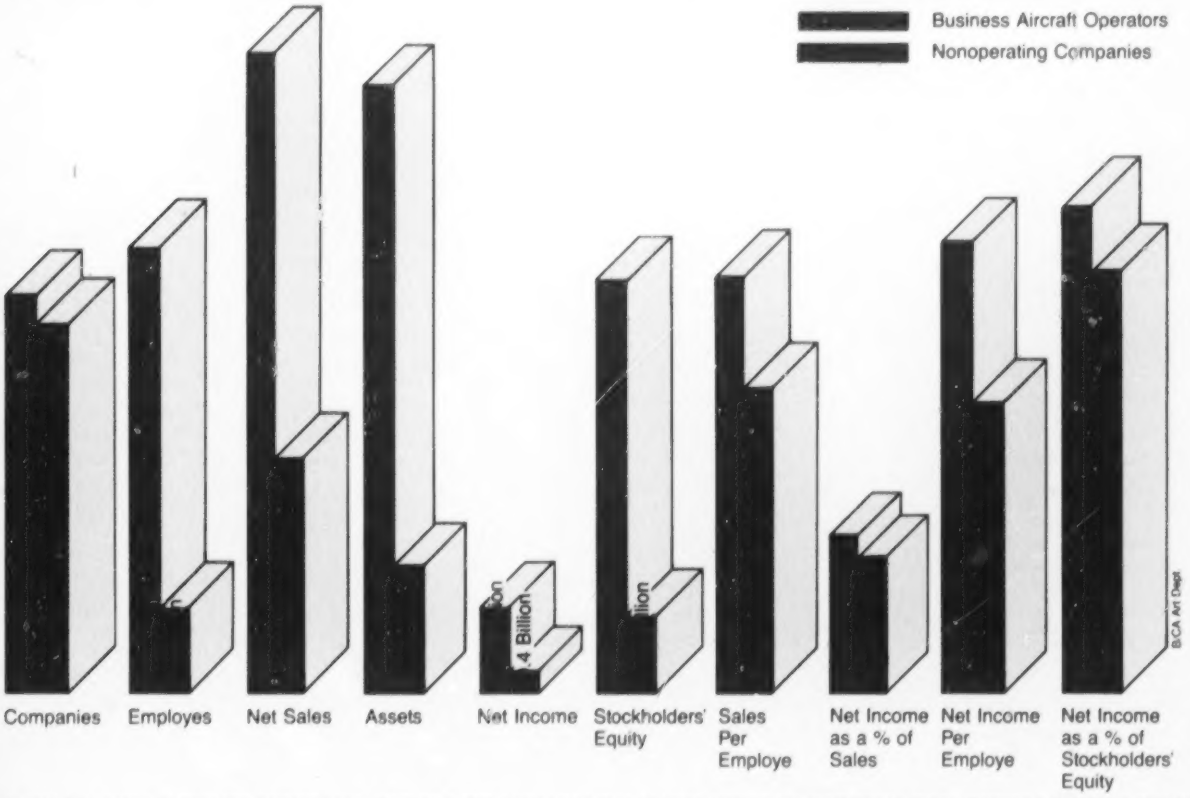
While the direct correlation between aircraft use and positive financial performance is not entirely clear, there remains the strongest circumstantial evidence in the aircraft operators' favor.

From a theoretical standpoint, if sound management is accepted as a prerequisite for superior financial performance, and the use of company aircraft represents sound management, then it follows that those companies operating aircraft should fare better than those that do not.

It would, however, be naive and somewhat simplistic to think that a company's use of business aircraft is solely responsible for that organization's prowess in the business world. Perhaps the statistical advantages held by the aircraft operating

Fortune 1,000 . . . *continued from page 45*

Figure 1 **Fortune 1,000 Summary**



In nine key areas of financial performance, *Fortune* 1,000 companies that operate aircraft far outdistance those *Fortune* 1,000 firms that do not fly aircraft. And indications are that these operators will recover faster from the recession than nonoperators.

companies reflect an aggressive management that has recognized (we think wisely) that business aircraft can make executives significantly more productive through increased access and more efficient travel.

The total number of aircraft operators among the *Fortune* 1,000 companies was down slightly last year to just under 54 percent of the total—536 in 1981 versus 541 in 1980—while the total size of the composite fleet was up substantially, from 2,012 in 1980 to 2,229 in 1981. However, the aircraft operators' large composite advantage in total net sales remains unchanged from the past two years at 87 percent.

One major change in the configuration of the *Fortune* 1,000 has been the elimination of the broadcasting and motion picture group. *Fortune* no longer considers these companies industrials. As a result, corporations like CBS and Twentieth Century Fox do not appear among the *Fortune* 1,000. The removal of the aircraft operators in this group partially accounts for the overall loss of five operators this year.

Companies operating aircraft in 1981 continue to perform better than nonoperators by every financial measure, and an analysis shows that the 536 companies that operate aircraft have 83 percent of the 17.2 million persons employed by the top 1,000 corporations, 87.9 percent of the $1.894 trillion in assets, 89.5 percent of the $90 billion in net income and 88 percent of the $633 billion in stockholders' equity.

In terms of productivity per employe or sales per employe, the gap between aircraft operators and nonoperators is increasing. Statistics show that the average sales per employe for operating companies was $115,555, compared with $82,241 for nonoperators. That is, companies operating aircraft sold 41 percent more than their competition on a per employe basis—an improvement of $3,438 over the nonoperators.

Even more striking is the difference in the area of net income per employe: Aircraft operators averaged $5,618 per employe compared with $3,255 for the nonoperators. And the operators increased their net income over last year by 10.7 percent while the nonoperators dropped 6.3 percent. The difference of $2,363 per employe puts this year's operators 73 percent ahead.

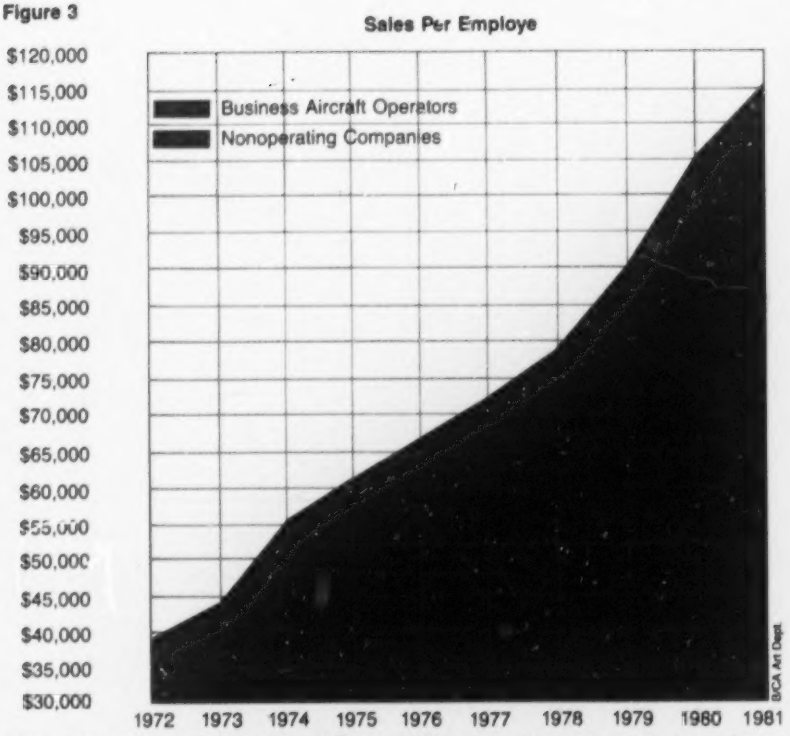
While the ratio between operators and nonoperators is not that large—536 versus 464—net sales of $1.66 trillion by aircraft operating companies was nearly seven times that of the companies that do not operate aircraft.

Figure 2

Comparative Fleet Size

Number of Aircraft	Number of Companies
1	165
2	112
3	87
4	35
5	25
6	20
7	21
8	10
9	7
10	5
11	11
12	4
13	7
14	4
15	4
17	1
18	4
19	1
20	1
21	3
22	2
26	1
27	1
32	1
34	1
37	1
42	1
45	1
2,229	536

Figure 3



Although annual sales per employe of *Fortune* 1,000 companies has increased over the last decade, firms that do not operate business aircraft only registered an increase that was little over half that of corporations that operate business aircraft.

Companies operating aircraft also outpaced nonoperators in total employment during 1981—14.3 million versus 2.9 million for the nonoperators.

The total *Fortune* 1,000 fleet was up in 1981 by a healthy 10.8 percent, versus 9.2 percent in 1980, while the average individual company fleet increased to 4.2 aircraft. Nearly a third of the operators—about 31 percent—operate only one aircraft. However, a dozen operators operate 21 or more aircraft (veritable miniature airlines) with the largest corporation flying 45 aircraft.

The average fleet size of the five largest operators was up to 38 aircraft in 1981 versus 34 in 1980. The five largest operators and their 1980 and 1981 fleet sizes were: Standard Oil of California, 37/45; Rockwell International, 36/42; Tenneco, 38/37; Mobil, 32/34; and E. I. Du Pont de Nemours, which recently acquired the aircraft of the Conoco Corporation following the merger of the two companies. The combined flight department has 32 aircraft.

Refiners Like to Fly

The *Fortune* 1,000 industrial corporations are traditionally broken down into 27 categories covering all areas of industrial production.

The largest concentration of aircraft operators within any category can be found among petroleum refiners: Thirty-eight of the 49 oil refiners in the *Fortune* 1,000 operate aircraft. While the refiners make up only 4.9 percent of the 1,000 companies on the *Fortune* list, they comprise 7.1 percent of the aircraft operators and fly 16.8 percent of the aircraft in the *Fortune* fleet.

Compared with all the other *Fortune* companies, the refining companies that operate aircraft account for 29 percent of the sales, 31 percent of the net income, 26 percent of the assets, 25 percent of the stockholders' equity, but only 7 percent of the employes.

Eighty-six percent of the *Fortune* fleet is operated by the top 500 companies, and 43 percent by the top 100 companies, based on net sales. Every company category has at least two operators (note that the category with only two operators (jewelry) contains only two companies), and the overall acceptance of business aviation in all categories is 53.6 percent.

For 1981, the *Fortune* fixed wing fleet consisted of 1,041 jets, 525 turboprops and 426 piston aircraft. One out of every ten aircraft was a turbine helicopter, and the number of twin engine rotorcraft in the *Fortune* inventory increased by 82 percent. There are now 71 of these aircraft flying for leading industrial corporations. Nine piston helicopters were registered in the *Fortune* fleet in 1981.

Figure 4

Groups	Companies		Aircraft Operated
	Operators	Nonoperators	
Mining, Crude Oil Production	21	13	74
Food	60	33	151
Tobacco	6	3	25
Textiles, Vinyl Flooring	16	18	30
Apparel	14	14	29
Furniture	5	5	8
Paper, Fiber & Wood Products	32	23	126
Publishing, Printing	17	28	52
Chemicals	38	29	169
Petroleum Refining	38	11	374
Rubber, Plastic Products	10	12	31
Leather	3	3	6
Glass, Concrete, Abrasives, Gypsum	22	8	52
Metal Manufacturing	31	28	102
Metal Products	30	33	106
Electronic Appliances	36	47	163
Shipbldg, RR & Transport Equip.	9	9	17
Measuring, Scientific, Photo Equip.	18	26	67
Motor Vehicles	20	12	106
Aerospace	14	6	181
Pharmaceuticals	11	10	37
Soaps, Cosmetics	6	12	15
Office Equipment (Computers)	7	19	46
Industrial & Farm Equipment	60	42	210
Jewelry, Silverware	2	2	2
Musical Instr., Toys, Sport Goods	7	8	14
Beverages	13	10	34
Average or Total	**536**	**464**	**2,229**

Older aircraft still constitute a considerable part of the *Fortune* fleet. The average year of manufacture for the entire fleet was 1973.

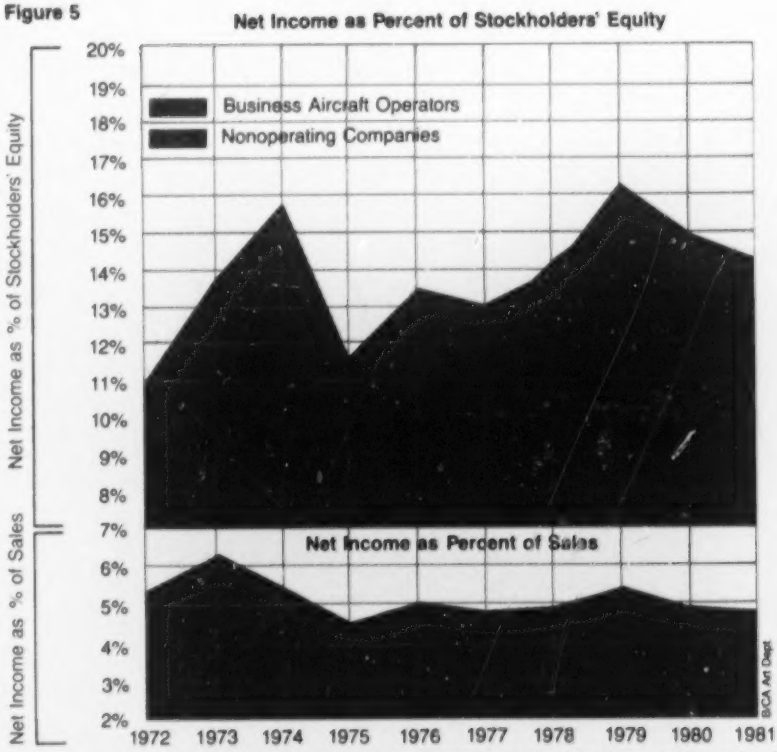
The average year of manufacture by aircraft type breaks down like this: jets, 1974; turboprops, 1973; piston airplanes, 1971; turbine helicopters, 1976; and piston helicopters, 1969.

But the age of the fleet hasn't kept its value down. Indeed, the 1981 fleet value has increased by 28 percent over 1980. Operators spent a total of $905.4 million for new and used aircraft in 1981, bringing the total value of the fleet to $4.11 billion. The average worth of the 2,229 aircraft operated by the *Fortune* 1,000 companies in 1981 was $1.84 million.

Overall, there were 29 aviation manufacturers vying for these top corporate dollars. Beech has placed the most aircraft (362) in the *Fortune* 1,000 fleet. Close on its heels comes Cessna with 357, Gulfstream American with 210, Dassault with 176, Gates Learjet with 163, Bell with 153 and Rockwell with 146. All other manufacturers have less than 100 aircraft each in service with *Fortune* 1,000 corporations.

A few odds and ends: Rockwell International has a P-51 Mustang registered in its name; Fairchild Industries has acquired a 1932 Kreider-Reisner "Challenger" C-2 (KR-31) biplane tieing Pepsi for

Figure 5



Despite a continuing decline in net income as a percent of stockholders' equity and a decrease in net income as a percent of sales among *Fortune* 1,000 companies, business aircraft operators continue to outperform nonoperators in these two areas.

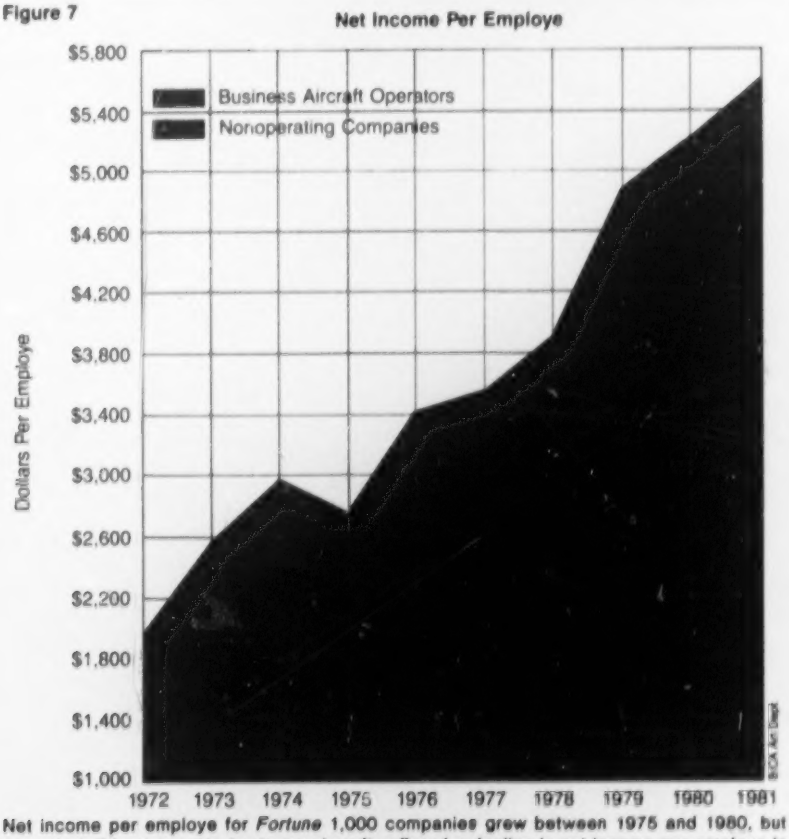
Sales Per Employe		Net Income As a Percent of Sales		Net Income Per Employe		Net Income As A Percent of Stockholders' Equity	
Operators	Nonoperators	Operators	Nonoperators	Operators	Nonoperators	Operators	Nonoperators
243,573	121,126	8.0	9.0	19,479	10,860	19.0	12.5
104,833	129,043	3.4	2.9	3,591	3,690	14.6	14.0
108,933	87,190	7.7	6.6	8,420	5,783	20.0	19.8
55,441	55,874	2.6	2.0	1,434	1,104	7.9	7.3
41,582	51,639	3.6	3.9	1,567	2,006	13.8	14.5
55,255	53,284	6.3	3.2	3,473	1,698	17.7	10.1
105,306	85,519	5.2	1.5	5,438	1,295	10.8	4.7
78,725	70,358	7.3	6.2	5,788	4,340	16.7	16.5
116,914	117,265	6.0	3.9	7,007	4,598	13.8	13.3
453,592	249,882	5.0	1.2-	22,648	2,936-	17.4	6.8-
74,441	68,397	3.4	2.8	2,535	1,905	11.4	9.7
50,885	42,070	4.2	3.3	2,130	1,367	14.8	10.4
76,262	89,114	3.9	3.7	2,964	3,314	7.7	8.6
110,963	105,575	4.3	5.9	4,755	6,212	11.0	16.5
72,299	74,027	4.2	3.7	3,019	2,704	13.0	11.3
62,993	56,681	4.9	4.5	3,067	2,559	14.9	13.6
73,385	78,982	3.3	3.8	2,440	2,964	14.1	11.8
66,040	61,334	8.8	4.2	5,836	2,594	17.3	9.9
84,771	105,814	0.1	3.1-	114	3,267-	0.5	56.9-
77,038	65,693	2.9	5.9	2,253	3,905	12.8	19.6
76,742	84,320	8.1	10.9	6,184	9,188	15.6	21.2
123,868	92,664	5.2	6.2	6,433	5,783	16.0	17.5
67,229	59,023	9.2	6.6	6,181	3,892	15.7	13.1
77,047	75,079	6.0	4.1	4,619	3,078	15.1	11.7
64,356	70,013	6.6	6.7	4,235	4,702	22.6	17.3
66,731	68,367	4.8	1.0	3,225	650	13.0	4.0
88,239	118,433	9.9	5.1	8,745	6,099	27.4	14.0
115,555	**82,241**	**4.9**	**4.0**	**5,618**	**3,255**	**14.4**	**12.5**

Figure 6

Business Aircraft Fleet Value
($ thousands)

	1979	1980	1981
Piston			
Single Engine	$ 3,454.6	$ 5,454.6	$ 7,114.0
Light Piston Twin	12,041.8	15,583.8	15,923.0
Pres. Piston Twin	9,627.7	11,922.7	11,311.4
Heavy Piston Twin	1,371.1	1,577.6	1,536.6
Pres. Piston four-eng.	124.7	139.7	135.5
Total	$26,619.9	$34,678.4	$36,025.5
Turboprop			
Light Turboprop	$209,005.3	$287,305.6	$344,766.2
Heavy Turboprop	50,808.7	98,722.5	101,861.3
Total	$259,814.0	$386,028.1	$446,629.5
Jet			
Light Jet (under 12,500 lb)	$ 61,246.5	$ 75,376.9	$ 75,620.6
Medium Jet (12,500 to 30,000 lb)	700,381.5	1,137,749.0	1,623,377.2
Heavy Jet (over 30,000 lb)	677,192.2	1,510,856.2	1,818,004.5
Total	$1,438,820.2	$2,723,982.1	$3,517,002.3
Helicopter			
Piston Helicopter	$ 842.2	$ 333.6	$ 415.2
Single Turbine Helicopter	20,628.7	30,017.3	41,222.0
Twin Turbine Helicopter	14,405.7	29,967.7	69,177.8
Total	$35,676.6	$60,318.6	$110,815.0
Grand Total	**$1,760,930.7**	**$3,205,007.4**	**$4,110,472.3**

Figure 7



Net income per employe for *Fortune* 1,000 companies grew between 1975 and 1980, but firms that did not operate business aircraft suffered a decline in net income per employe in 1981, while the net income per employe of operators continued to increase.

the honor of owning the oldest aircraft in corporate service (Pepsi is still using a 1932 Beech Travel Air for advertising); Northrop has acquired a Polish WSK Antonov AN2 transport (One can't help but wonder why) and finally, two *Fortune* 1,000 companies share aircraft with nonranking companies: Occidental Petroleum shares a Rockwell Sabreliner 65 with the Permian Corporation, and Texas Industries shares a Dassault Falcon 10 with Triangle Pacific Sharing.

Since we hope to be leaving the current economic malaise in the near future, we thought it might be interesting to check and see if, as a group, the *Fortune* 1,000 aircraft operators performed better coming out of that last recession than the nonoperators did. We came up with some interesting numbers.

The last time the economy did a snap roll was in 1974 and 1975. Despite the fact that 1976 was a year of recovery for the economy, 10 *Fortune* 1,000 companies thought it wise to add their names to the list of those operating aircraft, bringing the total to 502—the first time that operators outnumbered nonoperators.

Coming out of the recession of 1974 and 1975, sales for the nonoperating companies totaled $179.1 billion while sales for the operators amounted to $881.2 billion. These figures represented an increase over the year before (1975) of 6.2 percent for the nonoperators and 13.1 percent for the aircraft users. The figures indicate that *coming out of the last recession, aircraft operators grew at more than twice the rate of nonoperators.*

On a sales per employe basis, the nonoperators registered $48,502 in 1975, while the operators registered $60,894. As economic conditions improved in 1976, the nonoperators increased their sales per employe by only 7 percent to $51,897, while the operators' increase measured 9.1 percent to $66,460 per employe.

A further analysis based on net income per employe shows that the aircraft operating companies seem to be more resilient than their nonoperating counterparts. It seems that during bleak economic times, the operating companies far outdistance the nonoperators, while during better times, the relative difference is not as great.

The statistical evidence seems to indicate that companies with aircraft survive bouts of economic upheaval far better than their nonoperating competition.

One final note: Ten years ago, in the first B/CA survey of the *Fortune* 1,000 aircraft fleet, we counted 436 companies among the aircraft operators. Today there are 100 more. The trends are self-evident and foretell a promising future for those companies that have "discovered" business aviation. The trends are equally clear for those that have not. □